

This was in response to correspondence indicating that a dredging outfit, valued at \$1,000,000, wished to proceed on Lake Huron from Harbor Beach to Alpena, moving at the rate of 6 miles an hour. November 19 was the first day following the receipt of the request when weather conditions appeared to be propitious, and the advice was accordingly sent to Alpena.—*H. J. Cox.*

NEW ORLEANS FORECAST DISTRICT

Moderate weather conditions prevailed during the month. Warnings for freezing weather were issued for the northern portion of the district on the 5th, 8th, 15th, 19th, and 27th, and warnings for frost to the coast were issued on the 8th, 15th, 16th, and 20th; freezing and frosts occurred in the areas covered by these warnings.

Cold-wave warnings were issued on the morning of the 7th for Oklahoma and Arkansas and repeated in the evening for Arkansas; subsequent conditions justified the warnings.

Small craft warnings were displayed on parts of the Texas coast on the 5th, 14th, 19th, and 22d. No general storm occurred without warning. "Norther" warning was issued for Tampico, Mexico, on the 19th, and justified by subsequent conditions.—*I. M. Cline.*

DENVER FORECAST DISTRICT

Precipitation over considerable portions of the district attended disturbances which advanced eastward from California or the southern portion of the Rocky Mountain Plateau during the 1st-4th, 12th-13th and the 23d-24th. Heavy snow in southeastern and extreme eastern Colorado on the 6th and 7th resulted from a moderate low which was central over western New Mexico and eastern Arizona on the morning of the 6th but which increased rapidly in intensity during the day.

No general cold waves occurred and no warnings were issued. Falls in temperature sufficient to amount to local cold waves were noted at Flagstaff, Ariz., on the 8th and at Durango, Colo., on the morning of the 15th.

Frost warnings which were generally verified were issued as follows: For south-central Arizona, on the 5th and 16th; south-central and southeastern Arizona, on the 6th, 7th, 8th, 9th, 11th, 12th, 13th, and 14th; southern Arizona, on the 15th, 17th, and 18th.—*J. M. Sherier.*

SAN FRANCISCO FORECAST DISTRICT

The month opened with a disturbance in the process of formation over the plateau region, another already formed and moving eastward over British Columbia and an area of high barometric pressure of considerable magnitude over the Northeast Pacific Ocean. The plateau disturbance moved slowly eastward attended by scattered rains in this forecast district until the 4th, when it passed beyond the Rocky Mountains, and the pressure rose decidedly, the weather cleared and much lower temperatures overspread practically the entire forecast district, attended by frosts by the morning of the 8th as far south as the interior of southern California. Frosts were forecast from day to day in advance of their expected occurrence.

Following the 6th the barometer became quite low over the Gulf of Alaska and it remained so until the 18th, when the widespread disturbance in that region lost intensity and disappeared. In the meantime what seemed to be secondaries of this primary cyclone, moved onto the coast north of the mouth of the

Columbia River and in every instance these were attended by sharp falls in pressure, gales and rains on the north coast. These were covered by the forecasts and warnings issued from the district forecast center. These changes, however, did not extend south of the north portion of northern California, for in southern California the weather remained fair and cool with light, local frosts in the interior.

The highest wind that occurred in connection with the disturbances on the north coast was on the 15th, when a velocity of 92 miles an hour from the south was recorded at North Head, Washington.

After the 18th, the pressure again fell, over and south of the Aleutian Islands. This disturbance advanced eastward, attended by gales over the northern part of the ocean. In fact, from this time on, the weather was stormy generally over the northeast Pacific Ocean, but relatively quiet over this forecast district, the exception being a disturbance of minor intensity which formed off the southern coast on the 23d and during the following 36 hours caused heavy local rains in southern California. During the last decade of the month a disturbance which first appeared north of the Hawaiian Islands advanced slowly eastward and at the close of the month its center was still off the California coast. It was seven days in moving from west longitude 165° to a position off the California coast, the center at all times being south of latitude 40°. This disturbance gave general rains at the close of the month throughout practically the entire forecast district. Announcements telling of the presence of this disturbance off the coast and the likelihood of its causing rains were issued from the forecast center well in advance of the occurrence of the rain.

The month was one notable for the number of disturbances over the high latitudes of the Pacific Ocean. Nearly all of these gave pressures well below 29 inches, and two of them gave pressures below 28.50 inches. Unquestionably the month was marked by heavy and frequent gales on the trans-Pacific steamer routes. Advices concerning the pressure, weather and wind conditions over the ocean were disseminated twice each day through the Navy radio stations on the Pacific coast for the benefit of shipping.—*E. H. Bowie.*

RIVERS AND FLOODS

By H. C. FRANKENFIELD

As will be noted in the table following this report, widely scattered rises—of short duration for the most part—occurred in the Middle West and South during November. They were in the main well forecast and the losses resulting unavoidable. The following table, which is necessarily incomplete, gives for the more important cases the reported losses as well as the savings resulting from Weather Bureau flood warnings:

District	Losses (chiefly unhoused crops)	Savings by warnings
Houston, Tex.....	\$55,650	\$67,500
Terre Haute, Ind.....	13,000	25,000
Vicksburg, Miss.....	15,000	(1)
Mobile, Ala.....	(1)	1,500

¹ Not reported.

In the Houston, Tex., district the value of the flood forecasts was greatly increased by the use of radio as an additional method of dissemination. The official in